

Claims:

1. A photoelastic entertainment device comprising deformable photoelastic material molded into shapes and one or more light polarizing films for viewing fringe patterns within the photoelastic materials caused by stress.
2. The photoelastic entertainment device of claim 1, wherein the shapes are geometric shapes, flexible sheets, prisms, lenses, wedges, cubes, pyramids, amorphous forms, animal or dinosaur shapes.
3. The photoelastic entertainment device of claim 1, wherein the photoelastic material is transparent.
4. The photoelastic entertainment device of claim 1, wherein the photoelastic material is translucent.
5. The photoelastic entertainment device of claim 1, wherein the photoelastic material is opaque.
6. The photoelastic entertainment device of claim 1, wherein different regions of the photoelastic material are transparent, translucent and opaque or any combination thereof.
7. The photoelastic entertainment device of claim 1, wherein the chemical composition of the photoelastic material is variable as long as the material is photoelastic.
8. The photoelastic entertainment device of claim 1, wherein the modulus of elasticity is variable.
9. The photoelastic entertainment device of claim 1, wherein the photoelastic material is a single color.
10. The photoelastic entertainment device of claim 1, wherein the photoelastic material is different colors in different regions.

11. The photoelastic entertainment device of claim 1, wherein one or more magnets are embedded in the photoelastic material.

12. The photoelastic entertainment device of claim 11, wherein the magnets create stress in the photoelastic material and cause individual shapes to attract or repel one another.

13. The photoelastic entertainment device of claim 11, wherein the magnets vary in placement, number per object, size, magnetic strength, shape and chemical makeup.

14. The photoelastic entertainment device of claim 11, wherein the magnets have a glossy finish.

15. The photoelastic entertainment device of claim 1 wherein the shape is a prism, lens or wedge for creating various optical effects.

16. The photoelastic entertainment device of claim 1, wherein the one or more polarizing films are attached on one or more outer surfaces on the photoelastic material.

17. The photoelastic entertainment device of claim 1, wherein the one or more polarized films are embedded within the photoelastic material.

18. The photoelastic entertainment device of claim 1, wherein the one or more polarizing films are separated and supported by posts disposed between the films.

19. The photoelastic entertainment device of claim 18, wherein a distance separates the films such that a user can manipulate the photoelastic material between the films.

20. The photoelastic entertainment device of claim 1, wherein the one or more polarizing films are disposed on individual stands for flexibility in viewing.

21. The photoelastic entertainment device of claim 1, further comprising a polarized light source for passing light through the photoelastic material and then through a pair of polarized glasses.

22. The photoelastic entertainment device of claim 1, further comprising an unpolarized light source for passing light through a polarizing film, through a photoelastic object and through a pair of polarized glasses.

23. The photoelastic entertainment device of claim 1, wherein the one or more polarized films are polaroid films rotated with respect to one another for increasing or decreasing the amount of light passing through the photoelastic object.

24. The photoelastic entertainment device of claim 1, wherein bubbles or colloidal particles are molded into the photoelastic material for producing optical effects.

25. The photoelastic entertainment device of claim 1, wherein a thin air interface between embedded objects and the photoelastic material creates interference patterns of light.

26. The photoelastic entertainment device of claim 1, wherein additional optical effects are used, such as reflection, refraction, diffraction and interference patterns of light.

27. The photoelastic entertainment device of claim 1, wherein stress patterns are affected by manual manipulation of the photoelastic material.

28. The photoelastic entertainment device of claim 1, wherein stress patterns are affected by one or more springs attached to the photoelastic material.

29. The photoelastic entertainment device of claim 1, wherein stress patterns are affected by one or more strings attached to the photoelastic material.

30. The photoelastic entertainment device of claim 1, wherein stress patterns are affected by one or more elastic bands attached to the photoelastic material.

31. The photoelastic entertainment device of claim 1, wherein stress patterns are affected by one or more clamps attached to the photoelastic material.

32. The photoelastic entertainment device of claim 1, wherein combinations of manual

manipulation, springs, strings, elastic bands, clamps and force-applying devices are used to affect stress patterns.

33. The photoelastic entertainment device of claim 1, wherein an internal cavity is molded into the photoelastic material for receiving an object larger than the cavity, thus stretching the internal cavity and creating stress patterns.

34. The photoelastic entertainment device of claim 1, wherein a sharp object is used to create stress patterns by contacting the photoelastic material.

35. The photoelastic entertainment device of claim 1, wherein a separate lens is used to view stress patterns.

36. The photoelastic entertainment device of claim 1, further comprising an applied photoelastic coating.

37. The photoelastic entertainment device of claim 36, wherein the applied photoelastic coating is a liquid paint coating or a flexible sheet coating.

38. The photoelastic entertainment device of claim 1, further comprising an opaque object or a mirrored surface below, a characteristic of or embedded within the transparent or translucent photoelastic material.

39. The photoelastic entertainment device of claim 38, wherein the polarizing films are applied on a surface of the photoelastic material or mounted separately from the photoelastic material.

40. The photoelastic entertainment device of claim 39, wherein multiple polarizing films are rotated with respect to one another to control transmission of light.

41. The photoelastic entertainment device of claim 1, further comprising a mirrored surface, wherein the photoelastic material is manipulated between the mirrored surface and a

polarized film.

42. The photoelastic entertainment device of claim 1, wherein fixed, permanent fringes are fixed within the photoelastic object through curing techniques and permanent deformation strategies.

43. The photoelastic entertainment device of claim 1, wherein the photoelastic material is formed into a rope.

44. The photoelastic entertainment device of claim 43, wherein stretching forces create fringes that correlate to the amount of force applied.

45. The photoelastic entertainment device of claim 1, wherein transparent or translucent protective coatings are applied over outer surfaces of the photoelastic material.